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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,449	03/02/2004	Annette C. Grot	10030926-1	3455

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AGILENT TECHNOLOGIES, INC.
Legal Department, DL 429
Intellectual Property Administration
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EXAMINER

CHANG, AUDREY Y

ART UNIT PAPER NUMBER

2872

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,449

Applicant(s)

GROT ET AL.

Examiner

Audrey Y. Chang

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 11-13 and 19 are objected to because of the following informalities:

(1). The phrase "an object distance ... varies from between about 5 inches to about 20 inches" recited in claims 11 and 19 is confusing and indefinite since it is not clear if the object distance is not constant but varying in the imaging system and in the method for providing desired image. This makes the scopes of the claims unclear.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 6, 9-10, 14, 15-17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over patent application (DE 20207170).

The reference (DE '70) teaches an *optical image pickup system* that is comprised of an *imaging objective lens* (1, Figure 1) serves as the *imaging optics* for forming image of an object wherein the imaging objective lens is a *multifocal optical system* such that it has *different* focal point or focal length for *different* wavelength of the illumination light on the object. The image optical pickup system further comprises an *image-receiving unit* (5) for receiving the image of the object formed by the imaging objective lens. This reference also teaches to have a *light illumination means* (7.1 and 7.2) for

illuminating the objects with different spectral light, (i.e. different wavelength of light), (please see Figure and the abstract).

This reference has met all the limitations of the claims with the exception that it does not teach explicitly that the object is a single object with a single object distance. However it is implicitly true that the optical image pickup system can certainly be applied to pickup image for a single object such that by the implicitly properties of the image pickup system different image of the object as the result of different spectral illumination light will be formed and due to the multifocal property of the imaging objective lens some of the images will be out-of-focused on the constant image plane, (which believes to be the same result as the instant application). It would then have been obvious to one skilled in the art to apply the image optical system to form images for *a single object* as an alternative manner of applying the system and since the capability for applying system to a single object is implicitly included in the system such modification really is considered to be the manner in which a claimed apparatus is intended to be employed and it does not really differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Madham, 2 USPQ2d 1647 (1987).

With regard to claims 6 and 17, the cited reference (DE '70) teaches a plurality of separated light sources (7.1 and 7.2) are used to illuminate the object with different spectral or wavelength.

With regard to claims 9, 10, and 15-16, the reference (DE '70) teaches that the optical image pickup system further comprises *a signal evaluator* which serves as the image processor that evaluates the images detected and it implicitly would evaluate the focusing and image quality received by the image receiving unit. The selection of best-focused image is certainly implicitly included in the system.

With regard to claims 14 and 22, although this reference does not teach explicitly that the image pickup system comprises a digital still camera, however such feature is inherently included since the imaging objective lens and the photoelectric image receiver or the detector array essentially form the digital still camera.

4. Claims 2-5, 7-8, 11-13 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over patent application (DE 20207170) as applied to claim 1 and 15 above, and further in view of the patent issued to Hasman et al (PN. 5,526,338).

The optical image pickup system taught by the patent application (DE '70) as described for claims 1 and 15 above has met all the limitations of the claims. This reference teaches that imaging objective lens is multifocal optical system however it does not teach (with respect to claims 2-3 and 18) explicitly that it comprises a refractive/diffractive lens with the focal length varies inversely with the wavelength of the illuminating light. Hasman et al in the same field of endeavor teaches an image pickup device that includes a refractive/diffractive lens (Figure 6), that is multifocal and the focal length varies inversely with respect to the wavelength of the illumination light (60), (please see column 7, equation 2 and lines 10-12). It would then have been obvious to one skilled in the art to apply the teachings of Hasman et al to use a refractive/diffractive multifocal lens as the multifocal imaging objective lens for the benefit of using a standard multifocal lens system including a *diffractive* optical element that has high diffraction efficiency and sharp wavelength dependency that makes the multifocal optical lens that is sensitive to the wavelength of the illuminating light therefore ensuring good image focus property.

With regard to claims 4-5 and 20, reference (DE '70) teaches that the image receiving unit includes *photoelectric* receiver, but it does not teach explicitly that it include an *array* of photosensors and comprises CMOS detector array. **Hasman et al** in the same field of endeavor teaches that an *array* of photo sensors (211-214, Figure 10) is used to receive different images of different wavelengths. It would then have been obvious to one skilled in the art to apply the teachings of **Hasman et al** to modify the image pickup system of reference (DE '70) for the benefit of using *an array* of photosensors for the benefit of individually receiving and processing different images formed by different wavelength of the light. Although these references do not teach explicitly that the array of photosensors is CMOS detector array, but since the CMOS detector array is very common type of sensor array in the art to modify the system to use one will have been obvious to one skilled in the art for the benefit of making the optical image pickup system including standard photo sensors with good signal detecting function and makes the manufacture process standard and reduces cost as compared to using other non-standard and non-common detectors.

With regard to claims 7-8, the cited reference (DE '70) teaches a plurality of separated light sources (7.1 and 7.2) are used to illuminate the object with different spectral or wavelength. This reference however does not teach explicitly that the plurality of light sources includes a plurality of light emitting diodes. **Hasman et al** in the same field of endeavor teaches the image pickup system comprises a plurality of *laser diodes or light emitting diodes* that each emitting different wavelength of light and the light emitting diodes in the light source include about 4 diodes, (please see column 4, lines 6-10). It would then have been obvious to one skilled in the art to apply the teachings of **Hasman et al** to use light emitting diodes as the light sources for illuminating the object with different wavelength of light for the benefit of using well-known and easy assessable light sources for illuminating the object with different spectral wavelength.

With regard to claims 11-13 and 19, the reference (DE '70) does not teach explicitly that the object distance is between 5 to 20 inches however such is either inherently included or an obvious modification to one skilled in the art for the benefit of making the optical image pickup system suitable for taking image of an object that is placed in the range claimed. Hasman et al teaches that the light sources used include wavelengths of 635 nm to 830 nm, (please see column 4 lines 55-60). It would have been obvious to one skilled in the art to use these wavelengths in the image pickup system of reference (DE '70) for the benefit of making the images formed are visible in color form. With regard claims 12-13, although these references do not teach explicitly that the object is comprised of an iris of an eye or a fingerprint, such modifications would have been obvious to one skilled in the art for the benefit of picking up images of eye or fingerprint for perhaps authentication purpose. It also has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Madham, 2 USPQ2d 1647 (1987).

With regard to claim 21, these references do not teach explicitly that the sequentially illumination of the light sources is in the rate of 60 images per second. However such modification would have been obvious by simply programming the light source illumination for the benefit of forming the image at such rate.

Conclusion

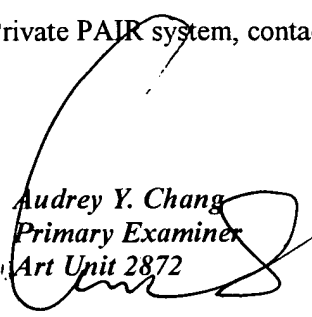
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

Art Unit: 2872

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Audrey Y. Chang
Primary Examiner
Art Unit 2872



A. Chang, Ph.D.